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10/579,702	05/19/2006	Keon Joon Ahn	2108.2	5121

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EXAMINER

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Status of Claims

Claims 1, 7 and 12 are amended.

Claims 10 and 11 are cancelled.

Claims 1-9 and 12 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Baharav et al. (US 7,274,808 B2, “Baharav”, hereinafter).

Regarding claim 1, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising:

- a cover glass (115, 110) closely contacting an object (finger) ([0043], lines 10-11);
- a light source (120) unit emitting light to the cover (115, 110); and
- a light receiving unit (144, 159, 130, 135, 140) reflecting the light reflected by the object (finger) in a predetermined direction, condensing the light (130), and picking up an image (140) of the condensed light;
- wherein the image of the light being used to control the optical pointing device is installed in the personal portable device ([0104] and [0105]).

Regarding claim 2, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising:

- a light source emitting light (120) and a light source guide (150) guiding the light emitted from the light source (120) to the cover glass (115).

Regarding claim 3, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising:

- the light receiving unit (155, 158, 159, 130, 138, 135, 128, 140) comprises:
- a reflecting mirror (158) for reflecting the light reflected by the object (finger) at the cover glass (115), the reflected light traveling horizontally;
- at least one condensing lens (159, 130) disposed on the path of the light reflected by the reflecting mirror (158) to condense the light; and
- an optical image sensor (140) picking up the image of the light transmitted through the condensing lens (159, 130)

Regarding claim 4, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising:

- the light receiving unit (155, 158, 159, 130, 138, 135, 128, 140) comprises:
- a reflecting mirror (158) for reflecting the light reflected by the object (finger) at the cover glass (115), the reflected light traveling horizontally;
- at least one condensing lens (159, 130) disposed on the path of the light reflected by the reflecting mirror (158) to condense the light;
- second reflecting mirror (138) for reflecting the condensed light transmitted through the condensing lens (159, 130) downward; and

- an optical image sensor (140) picking up the image of the light transmitted through the condensing lens (159, 130)

Regarding claim 5, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising:

- the light receiving unit (155, 158, 159, 130, 138, 135, 128, 140) comprises:
- a reflecting mirror (158) for reflecting the reflected light in a predetermined direction
- at least one wave guide (138, 135) installed in a predetermined direction to the reflecting mirror (158) to guide and condense the light; and
- an optical image sensor (140) installed next to the waveguide (138, 135) to pick up the image of the condensed light.

Regarding claim 6, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising:

- the light receiving unit (155, 158, 159, 130, 138, 135, 128, 140) comprises
 - a first reflecting mirror (158) for reflecting the reflected light in a first direction;
 - at least one wave guide (155) installed in the first direction to the first reflecting mirror (158, 130), to guide and condense the light;
 - a second reflecting mirror (138) for reflecting the condensed light to a second direction; and
 - an optical image sensor (140) installed in the second direction to the second reflecting mirror (138), to pick up the image of the condensed light

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baharav et al. (US 7,274,808 B2, "Baharav", hereinafter).

Regarding claims 7 and 12, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising a wave-guide (155) but fails to teach that the incidence face and the refraction each of which is convexly formed.

It is common knowledge in the art to use a convex type surface in a waveguide.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a convex surface in the wave guide of Baharav because it

will collimate the beam traveling parallel to the lens axis and once the light passes through the lens it will focus the light onto a specific spot, thus improving both the accuracy and intensity of the light impinging upon the image sensor.

Regarding claim 8, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising an optical path in the predetermined direction that is longer than a length to the optical sensors but fails to teach that the length provides a sufficient depth of focus.

It is common knowledge to arrange the optical path in a manner as to assure proper alignment and focus of a detector.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an optical path that provides a sufficient focus in combination with the optical pointing device of Baharav because it will increase the resolution of the image sensor, thus improving the quality of the device.

Regarding claim 9, Baharav (*figures 2, 16A and 16B*) an optical pointing device capable of being installed in a slim personal portable device, comprising an optical image sensor (4) but fails to teach that the light receiving unit includes a shading unit installed on the path of the light to remove noise of the light.

It is common knowledge in the art to design an image sensor containing a device or method to remove or reduce noise.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a specific device to reduce noise in the optical pointing

device of Baharav because it will improve the quality of the signal, thus improving the image being detected.

Response to Arguments

Applicant's arguments with respect to claims 1-9 and 12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Francis M. LeGasse Jr whose telephone number is (571) 272-9798. The examiner can normally be reached on Monday through Thursday 7:00 am to 5:30 pm E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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